We claim:

1. A chemotherapeutic composition comprising a oligonucleotide-camptothecin drug complex which incorporates sufficient amounts of active lactone camptothecin drug to exert therapeutic activity when administered to the body, wherein the camptothecin drug dissociates from the oligonucleotide within the body, and exerts its therapeutic activities.

2. The chemical composition of claim 1, where the camptothecin drug is selected from a group consisting of camptothecin; 10-hydroxycamptothecin; topotecan; 9-aminocamptothecin; 9-nitrocamptothecin; 10-hydroxycampto-thecin; 10,11-methylenedioxycamptothecin; 9-nitro-10,11-methylenedioxy-camptothecin; 9-chloro-10,11-methylenedioxycamptothecin; 9-amino-10,11-methylenedioxycamptothecin; 7-ethyl-10-hydroxycamptothecin (SN-38); DX-8951; GG211; 7-trimethylsilylmethylcamptothecin; and mixtures

thereof.

3. The composition of claim 1 where the oligonucleotide is selected from the group including single-stranded DNA, double-stranded DNA, antisense DNA, RNA, and catalytic RNA.

4. The composition of claim 1 where said camptothecin drug is noncovalently associated with the DNA and naturally dissociates in the body to release the active lactone form of the drug.

5. The composition of claim 1 where said camptothecin drug is covalently tethered to the oligonucleotide molecule and can be metabolically released from the oligonucleotide within the body.

6. The composition of claim 1 wherein said oligonucleotide-camptothecin drug complex is held within macromolecular assemblies of viral oligonucleotide vectors having a viral gene delivery system including retroviruses, adenoviruses, adeno-associated viruses, *Herpes* viruses, *Vaccinia* viruses, and other virus particles.

7. The composition of claim 1, wherein said oligonucleotide-camptothecin drug complex is held within macromolecular assemblies of non-viral oligonucleotide vectors having a non-viral gene delivery system including

transfection vehicles, naked DNA for injection, gene gun particles, liposomes including cationic liposomes, virosomes, receptor-mediated delivery vehicles, and biodegradable and non-biodegradable polymer matrixes.

8. The composition of claim 1 further including lipid so as to form a lipid:oligonucleotide-camptothecin drug complex from a surfactant, lipid or mixture thereof, said lipid defining a compartment wherein said oligonucleotide-camptothecin drug complex exists and the camptothecin drug is held and protected from hydrolysis and is thus stabilized.

9. A method for delivering oligonucleotide-stabilized lactone forms of camptothecin drugs to a host comprising the steps of: providing an oligonucleotide-camptothecin drug complex as a delivery vehicle wherein said camptothecin drug contains at least one lactone ring, and said oligonucleotide is capable of associating with said camptothecin drug so that at least some part of the lactone ring is associated with said oligonucleotide and thereby protected from hydrolysis; and administering the oligonucleotide-camptothecin drug complex to the host.